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12 November 1965

MEMORANDUM FOR: [REDACTED], Vietnamese Affairs Staff 25X1A

THROUGH: Director of Research and Reports
Chief, Economic Research
Chief, Resources and Industries Division
Chief, Fuels and Power Branch

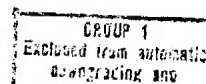
SUBJECT: Vulnerability of the Hanoi-Haiphong Electric
Power Network

1. As you indicated in your telephonic request of 10 November, the massive power failure in the northeastern part of the United States on 9 November 1965 raises a question of the vulnerabilities of the North Vietnamese electric power industry. Unfortunately, the cause of the New England failure is not yet known. It may have resulted from loss, during the peak load period, of significantly more power than anticipated in emergency plans. There may have been erroneous signals in switching gear, or indecision by load dispatchers. It probably would not be possible to produce the same chain-reaction, or cascading effect, in North Vietnam because the main power system is smaller and the load characteristics are different. Even if such an effect could be produced it would shut down the main power system for only a few hours at most.

2. Destruction in the Hanoi-Haiphong area of 7 powerplants, or their associated substations, would virtually eliminate the supply of power to modern industry in North Vietnam. An additional important installation in the power network is the Dong Anh substation, which is the focal point of transmission lines from three sources supplying power to the city of Hanoi. The Dong Anh substation and the Ung Bi powerplant substation are regarded as the two most vital components of the entire power system. Destruction of these two installations would curtail the power supplied by the network to Hanoi and Haiphong. However, three of the seven powerplants are located in those two cities, and neither city can be completely deprived of electricity for more than a few hours unless these three plants or their substations are destroyed. Depending on the severity of damage, reconstruction of the powerplants would require from one to two years. Restoration of the substations probably would take a minimum of six months. In both instances foreign assistance would be necessary.

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3. Power supplies can be cut off either by destruction of transforming substations associated with powerplants, or by destruction of the generating equipment in the plant itself. The damage inflicted on North Vietnamese powerplants by US air strikes to-date shows that aerial bombardment is likely to include destruction of both substation and powerplant. Limitation of destruction to substations only, can be effectively carried out by demolition teams. Because of inaccessibility and the heavy construction of powerplants, powerplant buildings and generating equipment are not recommended as suitable targets for demolition teams. Coordinated attacks by demolition teams against a number of targets simultaneously have a fair chance of achieving their objective, but subsequent raids would be likely to encounter greatly strengthened security measures around power installations.

4. Thus far US air strikes have been limited to five powerplants that make up only about 13 percent of the total national generating capacity. Four of the plants served relatively minor independent power systems. Air strikes against the fifth plant, located at Nam Dinh on the periphery of the Hanoi-Haiphong power network, were the first to involve a powerplant in North Vietnam's main power transmission network.

5. Attached for your information is a memorandum prepared last spring for the State Department. The assessment which it contains concerning the vulnerabilities of North Vietnam's electric power industry is still valid with the exception of the fact that the Nam Dinh powerplant was destroyed in August 1965.

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Fuels and Power Branch

Attachment:
As stated

Distribution: S-168#7
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